



**Montana Department of Natural Resources and
Conservation Trust Land Management**
Water Access Valuation

1.09.12

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Executive Summary

The Trust Land Management Division (TLM) of the State of Montana Department of Natural Resources and Conservation (DNRC) administers and manages the state trust timber, surface, and mineral resources under the direction of the State Board of Land Commissioners. TLM holds 5.1 million surface acres.¹ There are approximately 4,605 appurtenant water rights, owned by 3rd parties, that possess points of diversion on State Trust Lands. TLM contracted with Lotic LLC (Lotic) to determine the proper method to value access to physical supplies of water on TLM lands.

To determine a methodology to value access to physical supplies of water, this analysis reviewed existing methodologies to value easements and access to resources. This research identified six applicable methodologies: 1) direct sales and rental comparison, 2) fees based on income from authorized use, 3) replacement cost approach, 4) replacement cost approach (variations), 5) competitive bid, and 6) negotiated fees. This project also researched methods other western states and two federal agencies employ to value access to physical supplies of water.

Site specific factors influence value of access to physical supplies of water. The factors include quality, timing, alternative supply options, adverse effect, and use. Other factors may also exist on a site-specific basis. The report identifies how each of these factors influence the value of access to water supplies.

The information gained from the analysis of factors that influence access values, research on relevant valuation methodologies and interviews from other western state trust land divisions was utilized to determine the most applicable methodology for TLM to value access to physical supplies of water on their properties. Based on this research, multiple valuation methodologies are applicable to value access to water access on state trust lands. Each potential situation in which a 3rd party would like to access water on state lands should be analyzed and valued on a case-by-case basis. The 3rd parties and the state will most likely arrive at these values through negotiations. This research recommends utilizing replacement cost and comparable sales as the basis for these negotiations.

This analysis also analyzed various fee structure utilized to charge 3rd parties for access to physical water supplies on TLM lands. It is recommended that TLM employ a two-component fee structure including 1) Application Fee and 2) Access and Use Fee. The

¹ *Trust Land Management Division*. Department of Natural Resources and Conservation. Web. 04 Sept. 2011. <<http://www.dnrc.mt.gov/Trust/Default.asp>>.

application fee is a one-time and nominal fee set through administrative process. Unlike the water usage fee, the application fee has no relationship to the value of water. Together, these two components will comprise the total charge to 3rd parties to access water on State Trust Lands.

Introduction

The Trust Land Management Division of the State of Montana Department of Natural Resources and Conservation administers and manages the state trust timber, surface, and mineral resources under the direction of the State Board of Land Commissioners. TLM holds 5.1 million surface acres.² There are approximately 4,605 appurtenant water rights, owned by 3rd parties that possess points of diversion on State Trust Lands.

Consistent with TLM's mission to generate revenue from state land and mineral assets, there is an expressed interest in generating revenue from their water assets. To achieve this objective, TLM contracted with Lotic to determine the proper method to value access to physical supplies of water.

3rd Party Water Rights Portfolio

The database of water rights owned by 3rd parties with points of diversion on TLM lands was received from the Department of Natural Resources and Conservation Water Rights Bureau on July 19, 2011. TLM contracted with Lotic to determine the proper method to value access to physical supplies of water. The parameters of this dataset search included water rights not owned by TLM that possess a point of diversion (POD) on State Trust Lands. "3rd parties" include any individuals, agencies, organizations, and companies not associated with the TLM. The 3rd party water rights dataset provided by the DNRC for this project include 4,605 unique water rights and contains more than 28 types of beneficial uses. Table 2 summarizes these 3rd party water rights into categories based on use.

² Ibid.

Table 1: Categorized 3rd party water rights

Purpose of Use	Number of Water Rights
Agricultural (irrigation, stock, etc.)	3,260
Urban (municipal, industrial, domestic, etc.)	864
Other (Fishery, fire protection, recreation, etc.)	518
Total	4,605

Further research is needed to identify ownership of the respective places of use (POU) of the 3rd party water rights included in this database. The POU ownership determines possessory interest in the place of use of the water rights. This analysis strives to determine water access valuation methodologies for water rights with 3rd party possessory interest and PODs on State Trust Lands. The potential exists that many of the water rights are actually owned by TLM-based on place of use ownership-and are incorrectly labeled in 3rd party names. Thus, clarifying the water rights in this dataset through a more extensive place of use ownership analysis is essential for the state to better understand their water access values and manage these assets.

As it stands, these current broad search criteria produced three legal classifications of water rights represented in the dataset. These water rights, that all possess PODs on State Trust Lands, are most easily distinguished by their places of use ownership.

1. *State ownership of place of use.* Certain water rights in this dataset possess both a point of diversion and place of use on State Trust Lands. The Pettibone vs. Department of State Lands court ruling clarified water rights with points of diversions and places of use on State Trust Lands have possessory interest belonging to the state.³ For this reason, it is recommended that the state identify these water rights and file an ownership update to clarify TLM's ownership of these assets.
2. *3rd party ownership of place of use.* Likewise, water rights that possess a place of use that is entirely off of State Trust Lands maintain 3rd party possessory interest. Because their point of diversion occurs on State Trust Lands, the state maintains the right to charge for access to this water supply.⁴

³ "DEPT OF STATE LANDS v PETTIBONE :: June, 1985 :: Montana Supreme Court Decisions :: Montana Case Law :: US Case Law :: US Law :: Justia." *US Law, Case Law, Codes, Statutes & Regulations :: Justia Law*. Justia. Web. 04 Sept. 2011. <<http://law.justia.com/cases/montana/supreme-court/1985/33c309b9-af8b-48fe-90b5-59b1677d50b6.html>>.

⁴ Butler, Tom. "Who Owns Groundwater Developed upon State Trust Lands and Applied to Beneficial Use upon Private Lands." 18 July 2011. E-mail.

3. *Shared state and 3rd party of place of use.* In select cases, the ownership of the place of use is shared by the state and 3rd party interest. For example, an irrigation water right irrigates 100 acres, and 40 of the acres fall on state lands, and 60 of the acres fall on 3rd party lands. In this instance, it could be assumed that the ownership of the water right is split proportionally according to the place of use ownership (40/60). Similarly, the state still maintains the right to fully charge an access fee to the physical supply source of water, or point of diversion, for this water.⁴

In all three scenarios, the basis for possessory interest is defined by the place of use for the respective water right. Additional analysis of these water rights' POU will provide even greater clarity for the possessory interest of the assets. The analysis that follows is best applied in scenarios where place of use is located on 3rd party lands.

Factors that Influence the Value of Access to Water

There are many factors that influence the value of access to physical supplies of water. Valuation of access to physical supplies to water will require the gathering and analysis of information related to the specific situation. The following section describes general factors that are considered when establishing value for access.

Water Quality

The quality of a water source can influence the suitability of physical water supplies for a potential use. Poor quality water may require treatment before use for industrial or municipal purposes, or the poor quality of the water source may render the source entirely useless. For example, water with high saline content may be unsuitable for irrigation due to undesirable impacts on the soil. If the quality of the water on state trust lands limits its ability to meet the demands, the water may have limited value to the user. This limitation can negatively impact the value of the physical supply of water. The evaluation of water quality is very site specific.

Timing

The allowable period during which the 3rd party can access the water source will influence the value of the access provided. The timing of allowable access must match the intended use. Most high value water demands such municipal and industrial demands require water on an annual, year-round basis. Limiting the access to the water supply anytime during the

calendar year could restrict the municipalities' ability to use the water source. Timing's influence on access values will be dependent on the intended use and project objectives.

Supply Options

The value of access to physical supplies of water is influenced by the availability of other supplies to meet the future water demands in the region. Other supply options that the 3rd parties have available to them may include source switching, accessing water supplies on another property, tying into existing water supply systems or developing a new water supply system with an alternative source of water. Generally speaking, cost and availability of these alternative supplies will determine the value of access to water supplies on the state trust lands. In areas with abundant alternative water supplies, the access to TLM water supplies may be of lesser value.

Quantity

The amount of water that is available to the 3rd party on TLM lands will influence the value of access to the supply. If the physical supply of water on TLM lands is able to fully meet the 3rd party's needs, the access to this source may be of high value. If TLM lands can only provide a portion of the 3rd party's needs, the value of the TLM supply may be limited. Local hydrology may play a decisive role in availability of adequate water quantity.

Adverse Effect

Potential adverse effect to other natural resources also impacts values of access to physical supplies of water. The greater the potential for negative impact the higher the access value. For example, water access for mining uses carry additional risk and costs due to the potential to damage other resources on the property. As a result, access to water for mining should reflect risks of these potential future costs. When valuing water access an analysis of all potential adverse effects should be considered.

End Use

The end use of the water also influences water access values. Higher value end users such as municipalities and industrial users generally warrant higher values for access to the water. For example, access to water supplies for a commercial or industrial use will generally possess higher access values than access of water to a stock water user. Various valuation methodologies can be employed to determine end use values for the water.

Other

As presented in this analysis, the access to physical supplies of water is site specific. Additional location specific factors may also influence the value of access to physical supplies of water.

Water Access Valuation Methodologies

The question posed by this project is unique: How do you value the right to access physical supplies of water? For this reason, the initial phase of this project focused on a literature review of appropriate methodologies to derive these values. Due to the limited publications on valuing access to physical supplies of water, much of this work focused on easement literature. The most applicable methodologies and corresponding shortcomings are as follows:

1. Direct sales and rental comparison approach

Direct sales and rental comparison applies comparable transactions from the private marketplace to determine usage fees. In the direct sales approach, the appraiser investigates and analyzes applicable sales data for uses similar to the authorized use. Fees based on this method are determined by using a percentage of the appraised value. Two drawbacks of this approach include the basis for determining appropriate percentages to base easement value upon and a lack of comparative transactions. No relative comparable sales specifically defining the values for access to physical supplies of water were uncovered in the research conducted for this analysis.^{5,6} However, based on this research, water rights values can be used as the basis of a comparable sales analysis. Under this application the water right values serve as a proxy for water access values. As such, this method is the preferred methodology when ample comparable sales exist. This methodology is further detailed under the recommended methodology section of this analysis.

⁵ Colby, Bonnie G. "Estimating the Value of Water in Alternative Uses." *Natural Resources Journal* 519.29 (1989). Print,

⁶ Johnson, Kenneth. "Chapter 30- Fee Determination." United States Forest Service, 17 Sept. 2008. Web. 04 Sept. 2011. <http://www.fs.fed.us/specialuses/documents/2709.11_30.pdf>.

2. Fees based on income from the authorized use.

This fee-based income approach includes use fees based on a percentage of an easement holder's revenue from use of the resource. This percentage of revenue can be staggered or "tiered" based on the percentage increase in total profitability from the resource. The primary drawback of this method pertains to the difficulty to implement with private entities that are not required to share income information. Similarly, extracting an accurate percentage attributed to only water access presents another criticism of this methodology.⁷

3. Replacement cost approach

The Replacement Cost Approach estimates the incremental cost of reproducing or replacing an equivalent quantity and quality of water. The value of the easement under this methodology is the incremental costs associated with the next best alternative. The approach should consider all risks and uncertainties associated with developing alternative water supplies in the analysis. The Replacement Cost Approach requires specific knowledge about the range of opportunities and costs associated with water supply development alternatives in the region. This approach typically results in the highest values.

Multiple variations to this approach exist. These variations include factoring in the valuation of resources extracted resulting from the easement and potential damages to the underlying land. This approach is most commonly utilized to value easements for timber and other natural resources..

The primary limitation of this approach in this analysis is this method requires very site-specific inputs.⁸ On a site-specific basis, in markets with limited comparable sales, the replacement cost is the preferred means to value access to physical supplies of water.

4. Competitive Bid Approach

The competitive bid approach applies in cases of existing competition for the resource. This method establishes a use fee through bid procedures. Similar methodologies involve auction procedures and protocols. These auction or bid methodologies are highly site specific and not applicable for a large-scale valuation. Furthermore, a lack of competitive

⁷ Trefzger, Joseph W. "Valuing Easements: A Simple Bargaining Framework." *Journal of Real Estate Research* 16.2 (1998). Print.

⁸ Herzdog, Steven. "The Appraisal of Water Rights." *Appraisal Journal* (2008). Print.

market exists for most 3rd party water originating on State Trust Lands. The detailed procedures for preparing and offering a bid prospectus also increase transactions cost.⁹

5. Negotiated Fees Approach

Fees based on negotiation, as opposed to an established fee schedule, are appropriate when other methods do not result in a standardized use fee reflecting fair market value.¹⁰ Similar to the other methodologies addressed, negotiated fees are site specific and can vary greatly depending on the basis and factors of negotiation. A basis for negotiation should exist. This basis is generally derived from one of the methodologies presented previously, but in some instances is derived from random numbers generated by the negotiating parties. The primary challenges associated with this means pertain to the lack of price signals and the relationships between the two entities negotiating the contract. Many of the TLM and 3rd party contracts represent bilateral monopolies. Under this scenario, there is both a monopoly (single seller) and a monopsony (single buyer). As a result, switching costs of both sides are prohibitively high and no competitive market exists. This type of relationship will impact the negotiation.¹¹ With this said, negotiated fees are the preferred means to value water access on a case-by-case.

Review of Charges to Access Water

In an attempt to collect comparable sales data, Lotic interviewed 11 western states' Trust Land Management Divisions and researched multiple federal agencies. The entities interviewed have 3rd parties with access points to water on the agencies' property.

Other Western State's Access Charges

Interviews were conducted with other western State Trust Lands departments. This research determined if these state's imposed fees to 3rd parties seeking access to physical supplies of water originating on State Trust Lands. Although both Wyoming and Arizona presented price points for access to physical supplies of water, no truly comparable sales

⁹ Johnson, 2008

¹⁰ Johnson, 2008

¹¹ Johnson, 2008

price points were revealed through these conversations with other western State Trust Lands Departments.

Generally speaking, these states charge for easements to build physical structures (ditches, roads, etc.) to develop water, but fail to include incremental fees for accessing the physical supply of water that originates on State Trust Lands. The potential exists that the failure to assess and charge for access to physical supplies of water in other western states is derived from legal limitations in these respective states. Table 3 summarizes the discussions with other western State Trust Lands Departments.

Table 3: Water access/easement protocols in 11 western states.

State	Water Access/Easement Methodology
AZ	\$50-\$245 an acre-foot (AF) depending on desired use. ¹²
CA	No separate valuation methodology and charge specific to water access. ¹³
CO	Historically, no separate valuation methodology and charge specific to water access. Beginning to assess potential environmental impacts and water values for 3 rd party storage projects on State Trust Lands. ¹⁴
ID	No charge for water easements held by 3 rd parties. ¹⁵
NV	No separate valuation methodology and charge specific to water access. ¹⁶
NM	No separate valuation methodology and charge specific to water access. ¹⁷
OR	No separate valuation methodology and charge specific to water access. ¹⁸
TX	No separate valuation methodology and charge specific to water access. ¹⁹
UT	No separate valuation methodology and charge specific to water access. ²⁰
WA	No separate valuation methodology and charge specific to water access. ²¹
WY	\$10.00 an acre-foot (AF) annually for all 3 rd party wells on state trusts lands. ²²

¹² Davis, Bruce. "Arizona State Trust Land Water Access Valuation Methods." Personal interview. 19 Nov. 2011.

¹³ Bellucci, Larry. "California State Trust Lands Water Access Valuation Methods." Telephone interview. 8 Aug. 2011.

¹⁴ Smith, Chris. "Colorado State Trust Lands Water Access Valuation Methods." Telephone interview. 8 Aug. 2011.

¹⁵ Cress, Neil. "Idaho State Trust Lands Water Access Valuation Methods." Telephone interview. 16 Aug. 2011.

¹⁶ McKay, Deanne. "Nevada State Trust Lands Water Access Valuation Methods." Telephone interview. 16 Aug. 2011.

¹⁷ Esquibel, Pat. "New Mexico State Trust Lands Water Access Valuation Methods." Telephone interview. 8 Aug. 2011.

¹⁸ Julia, Scott. "Oregon State Trust Lands Water Access Valuation Methods." Telephone interview. 26 Aug. 2011.

¹⁹ Fielder, Julie. "Texas State Trust Lands Water Access Valuation Methods." Telephone interview. 26 July 2011.

²⁰ Wilcox, Rick. "Utah State Trust Lands Water Access Valuation Methods." Telephone interview. 26 July 2011.

²¹ Ryan, Pat. "Washington State Trust Lands Water Access Valuation Methods." Telephone interview. 8 Aug. 2011.

²² Van Hatten, Jamie. "Wyoming State Trust Lands Water Access Valuation Methods." Telephone interview. 15 Aug. 2011.

³⁴ Davis, 2011

With the exception of Arizona, Colorado, and Wyoming all other western State Trust Land Divisions utilize land valuation methodologies to value access to physical supplies of water. Access to water is not distinguished from other types of access and easements by these states. Arizona and Wyoming presented the only price points

Arizona

The Arizona State Land Department possess multiple fee structures to access water on state trust Lands. Many of these structures are unique to Arizona and its water rights structure. For example, variations in price range from a low of \$50 an acre-foot for on-site use of an Arizona specific Type 2 water use to a high of \$245 an acre-foot for a project specific auction.²³ Most of these prices are set through historical comparable sales or a case-by-case appraisal process. Due to the unique structure and economics of this water market the Arizona values to access physical supplies of water are not relevant in Montana.

Wyoming

Wyoming's \$10.00 an acre-foot (AF) water access usage fee was set in the early 1990's and was based on water market values at the time. This fee has not been updated since its origination and for this reason is not deemed an accurate point of reference for this analysis. Wyoming determines the annual water usage charge by equipping each well with a flow meter to determine the water usage and charges water users on an annual basis. In addition to the water access fee, the state has recently added a base fee and a pipeline easement fee. The base fee accounts for the installation of the well pad and road access. This one-time fee is \$500 for commercial use and \$250 for domestic use. The pipeline fee is assessed on a linear foot basis.²⁴ The \$10/AF access fee for water is only applied to groundwater wells where the use of this water occurs off of State Trust Lands.

Like Wyoming, TLM seeks to develop an appropriate charge to 3rd parties who access physical supplies of water on TLM land. One difference between the two states is Montana proposes to charge an access fees for all water sources and Wyoming restricts the charges to groundwater wells. In Wyoming, surface water access charges are accounted for through the associated surface water ditch or pipeline easements. As a result, the State Trust Lands division does not assess an additional water access fee for surface water use that originates on Wyoming State Trust Lands.

²⁴ Van Hatten, 2011

Federal Agency Water Access Charges

This analysis also assessed water access/easement methodologies incorporated by two federal agencies: United States Forest Service and the Bureau of Land Management. The references provided by these agencies summarize methodologies to calculate oil, gas, energy related lines, pipelines, roads ditches, canals and other linear rights of way. Similar to the states' analyses, these agencies fail to distinguish values associated with access to physical supplies of water in their methodologies.

The USFS utilizes information from the United States Forest Service Handbook to determine easement methodologies.²⁵ In terms of water, the Forest Service provides special use permits that essentially constitute a rental fee for pipelines and associated structures. Special Use Permits are non-transferable and require a processing fee that ranges from \$107 to \$1,021 at the time of application, as well as an additional cost per linear foot paid annually.²⁵

Physical easement for irrigation ditches fall under a federal Ditch Bill Easement, and are free to the water user. Ditch easements are transferable, but only if the intended water uses remains agricultural or livestock.

Similarly, the BLM utilizes a "Fee System and Schedule" approach, which calculates rental values based on five-year NASS data. Similar to the USFS' approach, these rates are driven by land values and not the physical supply of water. These rental rates are enforced through the use of tiered "zones" (typically by county or water basin). Transparency highlights a primary advantage of this method. A rising concern with this method is that there is an inability to recognize many local "value drivers" and thus the department grossly underestimates the value of the easement (as it relates to the market value of the asset being accessed).²⁶

Recommended Methodologies

Based on the research conducted on relevant water access valuation methodologies and information gathered from other Western state trust land management divisions, the recommended means to value 3rd party access to physical supplies of water should be

²⁵ "Special Uses FS and BLM." *US Forest Service - Caring for the Land and Serving People*. United States Forest Service. Web. 04 Sept. 2011. <<http://www.fs.fed.us/recreation/permits/jointFSBLMpage.htm>>.

²⁶ "Lands and Realty." *DOI: BLM: National Home Page*. Bureau of Land Management. Web. 04 Sept. 2011. <<http://www.blm.gov/wo/st/en/prog/more/lands.html>>.

derived on a case-by-case basis. Without a standardized fee schedule, these water access values will primarily result in negotiated fees between the two contracting parties. Within the negotiation each party should present information to support their underlying price position. The two most applicable means to arrive at a price for access to physical supplies of water is replacement cost and comparable sales..

Replacement Cost Methodologies

As presented in the methodology section of this analysis, multiple variations on the replacement cost methodology exist. Generally speaking, the replacement cost methodology estimates the incremental cost of reproducing or replacing an equivalent quantity and quality of water. The value of the easement is the incremental costs associated with the next best water supply alternative. The approach should consider all risks and uncertainties associated with developing alternative water supplies in the analysis. Based on the research conducted on relevant water access valuation methodologies and information. These variations include factoring in the valuation of extracted resources and potential damages to the underlying land.

Although the overall framework is similar, each situation will be unique and require a site-specific application of this methodology.

Comparable Sales

Water right sales can be used as the comparable sales to value access to physical supplies of water. The basis of this assumption lies in the underlying premise of water rights and water supply. By definition [a] "water right" means the right to use water.²⁷ This implies a right to utilize a supply of water. Similarly, the underlying premise of access to water also implies a right to utilize a supply of water. The two, legal water rights and access to physical supplies of water, can be considered synonymous in regards to water supply and likewise the underlying value of the water.

The basic premise of trading water rights in the market further supports this assumption. When water rights are traded, these rights are typically senior and reliable to ensure the buyer is purchasing not only the legal right to use the water, but also the physical supply of water recognized by the right. Therefore, water values not only equate to a "paper" water right, but also physical supply of water.

²⁷ MCA § 85-2-422

Likewise, most water transactions involve a water right that possesses a secure supply of water. New water users typically secure, reliable sources of water – thus they tend to purchase the most senior, reliable water rights. This strategy ensures the desired supply of water is acquired. Other water appraisers have recognized the importance of securing a senior water right in terms of water supply.²⁸ Water rights transfers even occur in Montana's open basins—where new appropriations of water are available— further supporting physical water supply as the basis for the water values being traded.

Similar to the replacement cost methodology, the use of comparable sales to value access to water supplies should occur on a site-specific basis.

Recommended Fee Structure

Based on the preliminary research, this analysis recommends a two-component fee structure: 1) Application Fee and 2) Access and Use Fee. Together, these fees should help determine the water access fee assessed to 3rd party water users applying for access to physical supplies of water on State Trust Lands.

Application Fee

Any application for use on state trust lands requires a one-time application fee. This fee is set administratively and the basis is found in Administrative Rules of Montana 36.2.1003.²⁹

Water Uses

Currently, TLM has a land use license policy to assess fees for uses on state trust lands, which includes access to water. This analysis provides the methodologies that are employed by others in the marketplace for the access and use of water and water rights. Based on the information contained in this report it is recommended that the department consider each application on a case-by-case basis and employing the methodology and analysis that is most applicable to an application based on site-specific circumstances. Additionally, the recommended negotiations would be based on a site-specific appraisal that potentially utilizes replacement costs and/or comparable sales methodologies. In addition, the analysis

²⁸ Herzdog, 2008.

²⁹ "36.2.1003 : SCHEDULE OF FEES - Administrative Rules of the State of Montana." *Administrative Rules of the State of Montana*. Web. 03 Oct. 2011. <<http://www.mtrules.org/gateway/ruleno.asp?RN=36.2.1003>>

recommends varying the usage fee based upon volume of water used or applied for in the application.

Use Type

The existing beneficial uses presented in the water rights dataset are reflective of anticipated future end uses of water in Montana. These include 28 different types of uses for the water. The most logical classification of these uses is agricultural, urban, and other. Determining the value of access to and use of physical supplies of water for these end uses should occur through the negotiated fees and supported by replacement costs and comparable sales methodologies.

Contract Terms and Structure

After correctly classifying the end use of the water, contract terms and structure must be set for each new applicant to be able to properly determine the usage charge. The contract terms to access and use physical supplies of water are set based on the review of the following sections of Montana Code Annotated 2011: MCA § 77-1-101, 77-1-901, and 70-30-102.³⁰ The contract structures are based on the current lease/license guidelines provided by the DNRC.³¹ These terms and structures are classified as either an easement or access lease.

1. Easement

Easements are one-time payment contracts. The payment for the access to water originating on TLM lands is charged upfront at the onset of the contract. This one-time payment permits the 3rd party to access the water supplies each year without additional payment. Under this type of contract, the water user pays the upfront application fee plus the one-time permanent unit charge at the time of the contract. Table 6 below identifies likely end uses of water and applicability of easement terms. End uses for water use are depicted in the applicant's new permit application or on the water rights claim abstract.

³⁰ *Montana Code Annotated 2011*. State of Montana. Web. 03 Oct. 2011.
<http://data.opi.mt.gov/bills/mca_toc/index.htm>.

³¹ *Special Lease/Land Use License Guidelines*. 2007

2. Access lease/license

Access leases/licenses can vary in length and structure depending on the end use of the water. The lengths of these contracts are capped at 10 or 99 years depending on the type of contract. Table 6 below identifies likely end uses of water and applicability of terms. The contracts can also require an annual fee based upon a fixed annual volume or payment on a wholesale basis for actual water quantity used. The distinctions between standard lease payments and wholesale water contracts are as follows:

Standard Lease. Under the standard lease scenario, the water user pays the upfront application fee and an annual water lease value. The water user pays the unit value based upon a fixed volume of water. Under this contract structure, the user is subject to physical variations in water supply. For example, the user's lease could depict 100 AF, although, variations in water supplies may only allow the applicant to use 80 AF. The user is still required to pay for the entire 100 AF regardless of actual water use. In short, the buyer assumes variations in physical water supply under a water lease structure. One option to consider when setting lease fees is to annualize permanent water transaction values.³² Periodic rate adjustments are recommended for the standard lease structure.

Wholesale water contract. The wholesale water contracts require the users to only pay for the water diverted or pumped on an annual basis. These contracts require the installation of a flow meter and totalizer at the point of diversion. The clear distinction between wholesale water contracts and leases are wholesale water users only pay annually for water used. For example, if the user's beneficial use permit depicts 100 AF; however, the user only uses 80 AF of water, the user only pays for 80 AF of water.

³² All lease rates are amortized using 3.07%. Source: NASS Montana Farm Real Estate, series update March 4, 2011, Irrigated Crop Land Rent to Value Ratio, average of 1998 to 2010.

Table 6: Relevant contract terms selected by category and use.

Classification	End Use	Easement (Perpetuity)	Land Use License 10 years (max)	Lease 99 years (max)
Agricultural	Irrigation (canals)	Yes	Yes	No
	Stock	No	Yes	No
	Lawn and Garden	No	Yes	No
	Agricultural Spraying	No	Yes	No
Urban	Domestic ³³	Yes	Yes	No
	Geothermal Heating	Yes	Yes	Yes
	Mining	Yes	Yes	Yes
	Multiple Domestic	Yes	Yes	Yes
	Commercial	Case specific ³⁴	Yes	Yes
	Industrial	Case specific	Yes	Yes
	Institutional	Yes	Yes	Yes
	Municipal	Yes	Yes	Yes
Other	Fire Protection	No	Yes	Yes
	Fish and Wildlife	No	Yes	Yes
	Fishery	No	Yes	Yes
	Flood Control	Yes	Yes	Yes
	Instream Flow	Case specific	Yes	Yes
	Observation and Testing	No	Yes	Yes
	Other Purpose	Case specific	Yes	Yes
	Pollution Abatement	Yes	Yes	Yes
	Recreation	Yes	Yes	Yes
	Oil Well Flooding*	No	Yes	Yes
	Storage	Case specific	Yes	Yes
	Water Marketing	No	Yes	Yes
	Wildlife	No	Yes	Yes

The relative contract structure selected in each scenario will depend on the category of use and negotiations between the applicant and the Department.

Rate Adjustments

Reassessment of the application and usage fees should occur every five years to adjust for market conditions and accurately reflect the time value of money.

Long-term leases typically allow for annual price adjustments tied to a measurable, transparent price index, such as the Consumer Price Index. However, the value of water

³³ Domestic water use must serve a water district, city, town or community.

³⁴ Contract terms for case specific water use should receive proper diligence and legal review.

typically appreciates at a faster rate relative to inflationary indexes. Therefore, it is common for long-term leases to incorporate market rate adjustments periodically during the term of the lease, in addition to the annual price adjustments. The market rate adjustments are intended to assess the fair market value of the water at given time intervals during the lease term, and adjust the lease rate according to the current fair market value. The time intervals between the market adjustments typically range from two to five years. Terms surrounding market rate adjustments always include provisions that prevent the lease rate from being reduced.

For application fees, TLM should make periodic adjustments that reflect changes to TLM's Land Use License Application Fee.

Appendix A — Worksheet 1

Water Access Lease/License Field Evaluation Form

SAMPLE

Use this field sheet as a guide to collect information for 3rd parties desiring to access water on state trust lands. The information collected in this field sheet will be utilized in the valuation of the access to the physical supplies of water. Please provide the following information.

Project Information

1. **Applicants name**
2. **Project Name**
3. **Basin or County**
4. **Project Description.**
5. **A map of point of diversion, conveyance, and place of use.**
6. **Proposed water end use.** (industrial, irrigation, stock, municipal, etc.)
7. **Proposed timing.** Requested months during the calendar year
8. **Proposed quantity.** Requested flow rate and volume.
9. **Proposed Source.** Groundwater or surface water. Source name.
10. **Proposed conveyance.** Requested infrastructure, design and operation.
11. **Current status of water permits or necessary easements.**

Source Information

1. **Water availability from the source.** (does the source flow all year round or is it limited?)
2. **If the intended source is a spring or well - is there additional infrastructure or development required for the 3rd party to utilize the water source?**
3. **Water quality information.**
4. **Potential negative impacts of the proposed development/project to the surrounding resources and property.**

Agency Information

1. **Alternative water supplies the 3rd party has available to them to meet their needs.**
2. **Quantity and quality available to the 3rd party through development of the alternative supplies.**
3. **Challenges the 3rd party may face if they attempt to develop one or more of the alternative water supplies.**

Other Information

1. **Provide any other information that you feel may be relevant.**